9200195

THE UNIVERD STRAILES OF ANY TERRICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Pioneer Ki-Bred International, Inc.

Waltereas, there has been presented to the

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen years from the date of this grant, subject to the payment of the required fees and periodic replenishment of viable basic seed of the variety in a public repository as provided by LAW, the right to exclude others from selling the variety, or offering it for sale, or reproducing it, importing it, or exporting it, or using it in producing a hybrid or different lety therefrom, to the extent provided by the Plant Variety Protection Act T. 1542, As amended, 7 u.s.c. 2321 et seq.)

SOYBEAN

'9831'

In Lestimony Wathercot, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this 30th day of September in the year of our Lord one thousand nine hundred and ninety-four.

Allost

Kenneth Alwans

Plant Variety Protection Office Agricultural Marketing Service

Clive Est Secretary of Agriculture

Solic reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Office, OIRM, Room 404-W, Washington, D.C. 20250; and to the Office of Management and Budget, Paperwork Reduction Project (OMB #0581-0055), Washington, 20250.

FORM APPROVED: OMB 0581-0055, Expires 1/31/91

· · · · · · · · · · · · · · · · · · ·			
U.S. DEPARTMENT OF A AGRICULTURAL MARKET	Application is required in order to		
APPLICATION FOR PLANT VARIET	Y PROTECTION	CERTIFICATE	determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).
NAME OF APPLICANT(S) (as it is to appear on the Certificate)		2. TEMPORARY DESIGNATION OR	3. VARIETY NAME
Pioneer Hi-Bred International	, Inc.	EXPERIMENTAL NO.	9831
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP)		5. PHONE (Include area code)	FOR OFFICIAL USE ONLY
700 Capital Square 400 Locust Street Des Moines, IA 50309		515-270-3414	9200195 F Date
6. GENUS AND SPECIES NAME	7. FAMILY NAME (Botani	l	May 20, 1992
Glycine max	Legumino	sae	G A.M. P.M.
8. CROP KIND NAME (Common Name)	9.	DATE OF DETERMINATION	F Filing and Examination Fee:
Soybean	s	eptember 1986	E S Date
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGAN	. 1		R May 14 1992
Corporation			C Certificate Fee:
11. IF INCORPORATED, GIVE STATE OF INCORPORATION	12. DA	TE OF INCORPORATION	E \$ 250,00
Iowa		1926	V 031e E Dept 19, 1994
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO	SERVE IN THIS APPLICATION	ON AND RECEIVE ALL PAPERS	Lo Kegu 11,1111
James E. Miller, Ph.D. 7301 NW 62nd Ave., P.O. Box 8 Johnston, IA 50131-0085	5 700 Des	Roth (copy) Capital Square, 4 Moines, IA 50309	,
 a. X b. X b. X b. Exhibit B, Novelty Statement. c. X c. Exhibit C, Objective Description of Variety. d. X e. X e. X e. X e. X e. Statement of the Basis of Applicant's Ownershit. f. Seed Sample (2,500 viable untreated seeds). Date Seed g. X filing and Examination Fee (\$2,150) made payable to "T 	Sample mailed to Plant		-92
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SO			ee section 83(a) of the Plant Variety
Protection Act.) YES (If "YES," answer items 16 and 17 be	low) X NO (If -N	IO," skip to item 18 below)	
. 16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS NUMBER OF GENERATIONS?	TO 17. IF "YES" T	O ITEM 16, WHICH CLASSES OF PRODU	ICTION BEYOND BREEDER SEED?
YES NO	FOL	INDATION REGIST	ERED CERTIFIED
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VA	RIETY IN THE U.S.?		
YES III "YES," through Plant Variety Protection Act NO	Patent Act. Give da	te:,)	
19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR M YES (II "YES," give names of countries and dates) NO	MARKETED IN THE U.S. OR	OTHER COUNTRIES?	
20. The applicant(s) declare(s) that a viable sample of basic se		be furnished with the applicati	on and will be replenished upon
request in accordance with such regulations as may be appl The undersigned applicant(s) is (are) the owner(s) of this uniform, and stable as required in section 41, and is entitle	sexually reproduced	novel plant variety, and believ he provisions of section 42 of the	e(s) that the variety is distinct, Plant Variety Protection Act.
Applicant(s) is (are) informed that false representation here			
SIGNATURE OF APPLICANT [Owner(s)]	CAPACITY OR		DATE
James E. Miller	Direct Soybea	or, Worldwide in Research	5-8-92
SIGNATURE OF APPLICANT [Owner(s)]	CAPACITY OR	TITLE	DATE
			· /

Pioneer Hi-Bred International, Inc. PVP Application Variety 9831 Soybean April 1992

EXHIBIT A

Origin and Breeding History of Variety 9831

Summer	1983	Original cross made in Greenville, MS. Cross number was 2774. Parentage - 2076-18 * 2032-14 2076-18 = Essex * Davis 2032-14 = Dare * Tracy
Winter	1983-84	F1 plants grown in Hawaii under artificial light.
Summer	1984	F2 advanced to F3 by modified single seed descent at Greenville, MS.
Winter	1984-85	F3 advanced to F5 in Hawaii in two-generation advance by modified single seed descent.
Summer	1985	F5 bulk of 2774 grown in Greenville, MS and 123 plants selected.
Summer	1986	F6 progeny rows of 2774 grown in Greenville, MS. Row G6-11499 selected and composited.
Summer	1987	Yield tested G6-11499 as 2774-16 in three reps as entry 10 in test GRD707.
Summer	1988	Yield tested as 2774-16 in eight locations in the South and the Southeast. Plants were grown and harvested as individual plants to start strain purification.
Summer	1989	Yield tested as W2774-16 in eight locations in the South and the Southeast. 100 progeny rows were grown and 62 rows were bulked as breeders seed.

Summer 1990

Yield tested as Y2774-16 at eight locations in the South and the Southeast. Approximately three acres of breeders seed (foundation equivalent) were grown at Greenville, MS.

Summer 1991

Yield tested as XB83A at seven locations in the South and the Southeast. Approximately 40 acres of parent seed (foundation equivalent) were grown near Laurinburg, NC.

December 1991

XB83A nominated for release and full production and assigned the designation 9831.

Yield trials and seed production in 1991 indicate Variety 9831 is uniform and stable. As with other soybean varieties, variants can occur for almost any character during the course of repeated sexual production.

9200195

EASYLINK 0385461L001 10AUG94 17:26/17:26 EST

FROM: 478327 333439

PIOSEED DMS

PIONEER HIBRED

PIONEER DATA SYSTEMS (CRN: NONE)

TO: 3015045291

PIONEER HI-BRED INTERNATIONAL, INC.
PLANT BREEDING DIVISION

7301 NW 62nd AVENUE P.O. BOX 85 JOHNSTON, IA 50131

FAX TRANSMISSION

TO: Jeffrey L. Strachan

FAX NO: (301) 504-5291

PHONE NO: (301) 504-5489

FROM: John Grace

FAX NO: (515) 253-2221

PHONE NO: (515) 270-3582

DATE: August 10, 1994

TOTAL PAGES TRANSMITTED (INCLUDING THIS SHEET): 1

If you have any problems with this transmission or do not receive all pages, please call 515-270-3582 as soon as possible.

COMMENTS:

Addition to Exhibit A of PVP Application 9200194, '9312' (August, 1994).

Variety '9312' has undergone extensive testing from 1989 to 1993, and has been observed to be stable for all plant traits from generation to generation.

Addition to Exhibit A of PVP Application 9200195, '9831' (August, 1994).

Variety '9831' has undergone extensive testing from 1989 to 1993, and has been observed to be stable for all plant traits from generation to generation.

Table 1. 9831 vs 9791 for height in inches.

All observations are from plots planted using a randomized complete block design. Planted plot length was 21 feet, trimmed to 15 feet. Plot width was 4 30 inch rows, or 10 feet. Height was measured based upon the average height of the entire plot. Data was taken in 1990 and 1991.

1990

REP	9831 X1	9791 X2	x1–x2	(X1-X2)**2		
1 2 3 4 5 6 7 8	29.3 40.5 40.5 37 41 34 37 40		4.5 2.5 4 3.7	0.36 20.25 6.25 16 13.69 2.89 16 16	SD**2= SD**2= SD= t = t = DF=	(91.44 - (25**2 / 8) / (8*7) 0.23777 0.48761 (25 / 8) / 0.48761 6.40875 ** significant 1% level 7
sum ave		274.3 34.29	25 3.125	91.44		ht of 9831 = 37.4125 inches ht of 9791 = 34.2875 inches

1991

REF		9791 X2	x1-x2	(X1-X2)**2	
1 2 3 4 5 6 7	37 41 36	34.5 38 34.3	4 4 2.5 3 1.7 0.5 3	6.25 9 2.89	SD**2= (59.39 - (18.7**2 / 7) / (7*6) SD**2= 0.22463 SD= 0.47395 t = (18.7 / 7) / 0.47395 t = 5.63655 ** significant 1% level DF= 6
sum ave	274 39.14	255.3 36.47		59.39	ave height of $9831 = 39.1429$ inches ave height of $9791 = 36.4714$ inches

1990 and 1991 combined

9831 9791 REP X1 X2 X1-X2 (X1-X2)**2

SD**2=	(150.83-(43.7**2 / 15)) /(15*14)
SD**2=	0.11199
SD=	0.33465
t =	(43.7 / 15) / 0.33465
t =	8.70574 ** significant 1% level
DF=	14
n=	15

sum 573.3 529.6 43.7 150.83 ave 38.22 35.31 2.913

ave height of 9831 = 38.22 inches ave height of 9791 = 35.3067 inches

Pioneer Hi-Bred International, Inc. PVP Application for 9831 Soybean April 1992

EXHIBIT B

Variety 9831 is most similar to varieties 9791, S83-30, C368, DP417 and Hagood. However, Variety 9831 differs from S83-30, C368 and Hagood in soybean cyst nematode race 3 resistance; 9831 is susceptible, whereas S83-30, C368 and Hagood are resistant. In comparison to DP417, 9831 is resistant to frogeye leaf spot and DP417 is susceptible. In comparison to 9791, 9831 is 2.9 inches taller than 9791 (Table 1).

EXHIBIT C (Soybean)

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY SOYREAN (Glycine max 1.1.

	AN (Orycine max L.)				
NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME			
Pioneer Hi-Bred International, Inc.		9831			
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Coo	ie)		AL USE ONLY		
700 Capital Square 400 Locust Street	:	PVPO NUMBER			
Des Moines, IA 50309		92001	95		
Choose the appropriate response which characterizes the varing your answer is fewer than the number of boxes provided; Starred characters ** are considered fundamental to an adeq when information is available.	place a zero in the first box w	hen number is 9 or les	s (e.g., 0 9).		
1. SEED SHAPE:	• •	•			
2 L W	T				
	1 1	1 //A/ > 1 2.1 /T	07 (10)		
1 = Spherical (L/W, L/T, and T/W ratios = < 1.2) 3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)	2 = Spherical Flattened (4 = Elongate Flattened (I				
2. SEED COAT COLOR: (Mature Seed)	·				
1 1 = Yellow 2 = Green 3 = Brown	4 = Black 5 = Other (3	Specify)			
3. SEED COAT LUSTER: (Mature Hand Shelled Seed)					
2 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebso	oy'; 'Gasoy 17')				
4. SEED SIZE: (Mature Seed)		***			
1 3 Grams per 100 seeds		•			
5. HILUM COLOR: (Mature Seed)					
1 1 = Buff 2 = Yellow 3 = Brown	4 = Gray 5 = Imperfect Blac	k 5 = Black	7 = Other (Specify)		
6. COTYLEDON COLOR: (Mature Seed)					
1 1 = Yellow 2 = Green					
7. SEED PROTEIN PEROXIDASE ACTIVITY:					
1 1 = Low 2 = High					
8. SEED PROTEIN ELECTROPHORETIC BAND:					
1 = Type A (SP1 ^a) 2 = Type B (SP1 ^b)	••				
9. HYPOCOTYL COLOR:					
1 = Green only ('Evans'; 'Davis') 2 = Green with 3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71') 4 = Dark Purple extending to unifoliate leaves ('Hodgson';	n bronze band below cotyledons ('V	Voodworth'; 'Tracy')			
10. LEAFLET SHAPE:	·				
3 1 = Lanceolate 2 = Oval 3 = Ovate	4 = Other (Specify)				
			7		
FORM LMGS-470-57 (6-83) (Edition of 2-82 is obsolete.)	the state of the s		rage 1 of 4		

FORM LMGS-470-57 (6-83)

(Edition of 2-82 is obsolete.)

. 11. LEAFL	ET SIZE:	
2	1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17') 3 = Large ('Crawford'; 'Tracy')	9200195
12. LEAF	OLOR:	
2	1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton') 3 = Dark Green ('Gnome'; 'Tracy')	
★ 13. FLOW	R COLOR:	
1	1 = White 2 = Purple 3 = White with purple throat	
★ 14. POD C	DLOR:	
1	1 = Tan 2 = Brown 3 = Black	
15. PLANT	PUBESCENCE COLOR:	
1	1 = Gray 2 = 8rown (Tawny)	
16. PLANT	TYPES:	
2	1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton') 3 = Bushy ('Gnome'; 'Govan')	
★ 17. PLANT	HABIT:	
	1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ("Will') 3 = Indeterminate ('Nebsoy'; 'Improved Pelican')	
★ 18. MATU	DITY CROUP.	
X 18. MA10	1 = 000	8 = V
	9 = VI 10 = VII 11 = VIII 12 = IX 13 = X	
+ 10 DISEA	SE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)	
		•
	ERIAL DISEASES:	
* 2	Bacterial Pustule (Xanthomonas phaseoli var. sojensis)	
* 2	Bacterial Blight (Pseudomonas glycinea)	
* [3]	Wildfire (Pseudomonas tabaci)	
FUNG	AL DISEASES:	
* 1	Brown Spot (Septoria glycines)	
	Frogeye Leaf Spot (Cercospora sojina)	
★ 0	Race 1 0 Race 2 0 Race 3 0 Race 4 2 Race 5 Other	(Specify)
2	Target Spot (Corynespora cassiicola)	
2	Downy Mildew (Peronospora trifoliorum var. manshurica)	
0	Powdery Mildew (Microsphaera diffusa)	
* [Brown Stem Rot (Cephalosporium gregatum)	
2	Stem Canker (Diaporthe phaseolorum var. caulivora)	8

FORM LMGS-470-57 (6-83)

Page 2 of 4

19. DISEA	SE REACTION	: (Enter 0 = Not Tested; 1	Susceptible; 2 = F	Resistant) (Continued)					
FUN	IGAL DISEASE	S: (Continued)		·		9200195			
* 1	Pod and Stem	n Blight <i>(Diaporthe phaseold</i>	orum var; sojae)						
2	. Purple Seed S	Stain (Cercospora kikuchii)							
1	Rhizoctonia F	Root Rot <i>(Rhizoctonia solai</i>	ni)						
	Phytophthora	Rot (Phytophthora megas)	perma var. sojae)						
* 1	Race 1	1 Race 2 1	Race 3	Race 4 1 Race 5	0 Race 6	1 Race 7			
1	Race 8	1 Race 9 1	Other (Specify)	Races 10,12,17	,	· · · · · · · · · · · · · · · · · · ·			
VIR	AL DISEASES:			,					
1	Bud Blight (T	obacco Ringspot Virus)							
1	Yellow Mosaid	c (Bean Yellow Mosaic Viru	ıs)						
* 1	Cowpea Mosa	ic (Cowpea Chlorotic Virus)	. **					
$\boxed{1}$	Pod Mottle (B	Bean Pod Mottle Virus)							
* 1	Seed Mottle (Soybean Mosaic Virus)							
NEM	IATODE DISEA	ASES:							
	Soybean Cyst	Nematode (Heterodera glyc	cines)		-				
* 0	Race 1	0 Race 2 1	Race 3	Race 4 Other (S	pecify)				
0	Lance Nematode (Hopicialmus Colombus)								
* 1	Southern Roo	ot Knot Nematode (Meloido	gyne incognita)						
* 0	Northern Roo	t Knot Nematode <i>(Melaido</i>	gyne Hapla)						
	Peanut Root k	Knot Nematode (Meloidogy	ne arenaria)		•				
0	Reniform Nen	natode (Rotylenchulus reni	formis)						
	OTHER DISE	ASE NOT ON FORM (Spec	cify):						
. 		· · · · · · · · · · · · · · · · · · ·	•						
. —		SPONSES: (Enter 0 = Not	Tested; 1 = Suscept	ible; 2 = Resistant)					
* [on Calcareous Soil		,					
	Other (Specify	/)				·			
·	REACTION:	(Enter 0 = Not Tested; 1 =	Susceptible; 2 = Re	sistant)					
	Mexican Bean	Beetle (Epilachna varivestis	:)						
2	Potato Leaf H	opper (Empoasca fabae)	•						
	Other (Specify	/)							
22. INDICA	TE WHICH VA	RIETY MOST CLOSELY	RESEMBLES THAT	SUBMITTED,					
СНАЯ	RACTER	NAME OF VA	ARIETY	CHARACTER	NAME (DF VARIETY			
Plant Sh	ape	Howard		Seed Coat Luster	9791				
Leaf Sha	ape	9791		Seed Size	9791				
Leaf Col		9791		Seed Shape	9761				
Leaf Siz	e	9791		Seedling Pigmentation	9791	a			
		1				7			

23. GIVE DATA VARIETY	NO. OF DAYS MATURITY	NO. OF	NO. OF	NO. OF	NO. OF	NO. OF	NO. OF	NO. OF	NO. OF	NO. OF	NO. OF	NO. OF	NO. OF	NO. OF	NO. OF	NO. OF	PLANT	СМ		ET SIZE	SEED CON		SEED SIZE G/100	NO. SEEDS
		LODGING SCORE	PLANT HEIGHT	CM Width	CM Length	% Protein	% Oil	SEEDS	POD															
9831 Submitted	154.0	2.2	87			41.6	22.5	13.5																
9791 Name of Similar Variety	151.5	1.9	79			42.0	21.0	13.5																

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

- 1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
- 2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
- 3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A₂ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
- 4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

Exhibit D: In Exhibit C we have identified 9831 as susceptible to brown spot, pod and stem blight, rhizoctonia root rot, bud blight, yellow mosaic, cowpea mosaic, pod mottle, and seed mottle. This does not mean that 9831 is any worse for these problems than other varieties of similar maturity. Rather, we do not consider 9831 to be immune to these problems. Therefore, we have chosen to be conservative and have identified the line as 'susceptible'.

A concern is that this will lead to incorrect classification of varieties based upon characteristics open to interpretation. However, we are attempting to submit forms which are as complete and accurate as possible.

Some applicants may not view the term 'resistance' as equivalent to the term 'immunity'. Similarly, some may not view 'susceptibility' as the utter failure of a variety under applicable conditions. It would be most helpful if resistant and susceptible varieties could be identified. If standards are known, then the terms 'resistant' and 'susceptible' have a consistent meaning to all applicants.

Table 2. Isozyme information for 9831

ACO2	ACO3	ACO4	ACP	DIA	ENP	IDH1	IDH2	MDH	MPI	PGM	PHI
1	1	3	A	В	A	1	2	В	A	2	2

9831 is an early group VIII variety. If group VIII maturities are divided in tenths, the relative maturity for 9831 is 8.3.

Pioneer Hi-Bred International, Inc. PVP Application 9831 Soybean April 1992

EXHIBIT E

Pioneer Hi-Bred International, Inc. is the sole, original, and first breeder of soybean variety 9831, for which it solicits a certificate of protection.